

LISTING OF THE CLAIMS

This listing of claims, amended as indicated below, replaces all prior versions, and listings, of claims in the application.

1. (Currently Amended) Apparatus for forming conductive bumps on a plurality of semiconductor devices with an oxidizable material, comprising:

a chamber system adapted to house the semiconductor devices, the chamber system having an access opening;

a bump forming device located at a bumping site at which the semiconductor devices are positioned during bumping, the bumping site being situated so that the semiconductor devices are entirely outside the chamber system and adjacent to the access opening during bumping;

a gas supply for supplying an inert gas into the chamber system; and

a support table for supporting the semiconductor devices during bumping,

wherein the support table is receivable into the chamber system through the access opening, and is operative to move the semiconductor devices from the bumping site into the chamber system after bump formation.

2. (Original) Apparatus as claimed in claim 1, including an oxidation reduction device for introducing a supply of inert gas to the bumping site.

3. (Canceled).

4. (Original) Apparatus as claimed in claim 1, including a shroud positioned around the bumping site for covering one or more bumped semiconductor devices.

5. (Original) Apparatus as claimed in claim 4, wherein the shroud includes nozzles for introducing a supply of inert gas onto the semiconductor devices.

6. (Original) Apparatus as claimed in claim 1, wherein the chamber system comprises an outer chamber, and an inner chamber that is houseable within the outer chamber.

7. (Original) Apparatus as claimed in claim 6, wherein the inner chamber is removable from the outer chamber.

8. (Original) Apparatus as claimed in claim 7, wherein the removable inner chamber comprises at least a portion of the support table and an inner chamber cover for forming an enclosure around bumped semiconductor devices.

9. (Original) Apparatus as claimed in claim 7, including gas tubings that are detachably connectable to the inner chamber for bringing an inert gas into the inner chamber from an external source.

10. (Original) Apparatus as claimed in claim 1, wherein the support table is coupled to a positioning device that is operative to move the support table along a first axis.

11. (Original) Apparatus as claimed in claim 10, wherein the chamber system is coupled to a positioning device that is operative to move the chamber system along a second axis perpendicular to the first axis.

12. (Original) Apparatus as claimed in claim 1, wherein the bump forming device is an ultrasonic wire bonder.

13. (Original) Apparatus as claimed in claim 1, wherein the semiconductor devices are comprised in a semiconductor wafer and the support table is a wafer table.

14. (Withdrawn) Method for forming conductive bumps on a plurality of semiconductor devices with an oxidizable material, comprising the steps of:

providing a support table for supporting the semiconductor devices;
forming bumps on the semiconductor devices on the support table at a bumping site; and
moving the semiconductor devices from the bumping site into a chamber system after
bumping while supplying an inert gas into the chamber system.

15. (Withdrawn) Method as claimed in claim 14, including supplying inert gas to the bumping site during bumping.

16. (Withdrawn) Method as claimed in claim 14, wherein the bumping site is adjacent to an opening of the chamber system.

17. (Withdrawn) Method as claimed in claim 14, including positioning a shroud around the bumping site for covering one or more bumped semiconductor devices.

18. (Withdrawn) Method as claimed in claim 17, including supplying an inert gas onto the semiconductor devices from the shroud.

19. (Withdrawn) Method as claimed in claim 14, wherein the chamber system comprises an outer chamber, and a removable inner chamber that is houseable within the outer chamber.

20. (Withdrawn) Method as claimed in claim 19, including bringing an inert gas into the inner chamber from a detachable external source.

21. (Withdrawn) Method as claimed in claim 19, including forming an enclosure with the removable inner chamber for housing bumped semiconductor devices before removing the inner chamber.

22. (Withdrawn) Method as claimed in claim 14, including moving the support table along a first axis.

23. (Withdrawn) Method as claimed in claim 22, further including moving the chamber system along a second axis perpendicular to the first axis.

24. (Withdrawn) Method as claimed in claim 14, wherein bumps are formed on the semiconductor devices with an ultrasonic wire bonder.

25. (Withdrawn) Method as claimed in claim 14, wherein the semiconductor devices are comprised in a semiconductor wafer and the support table is a wafer table.